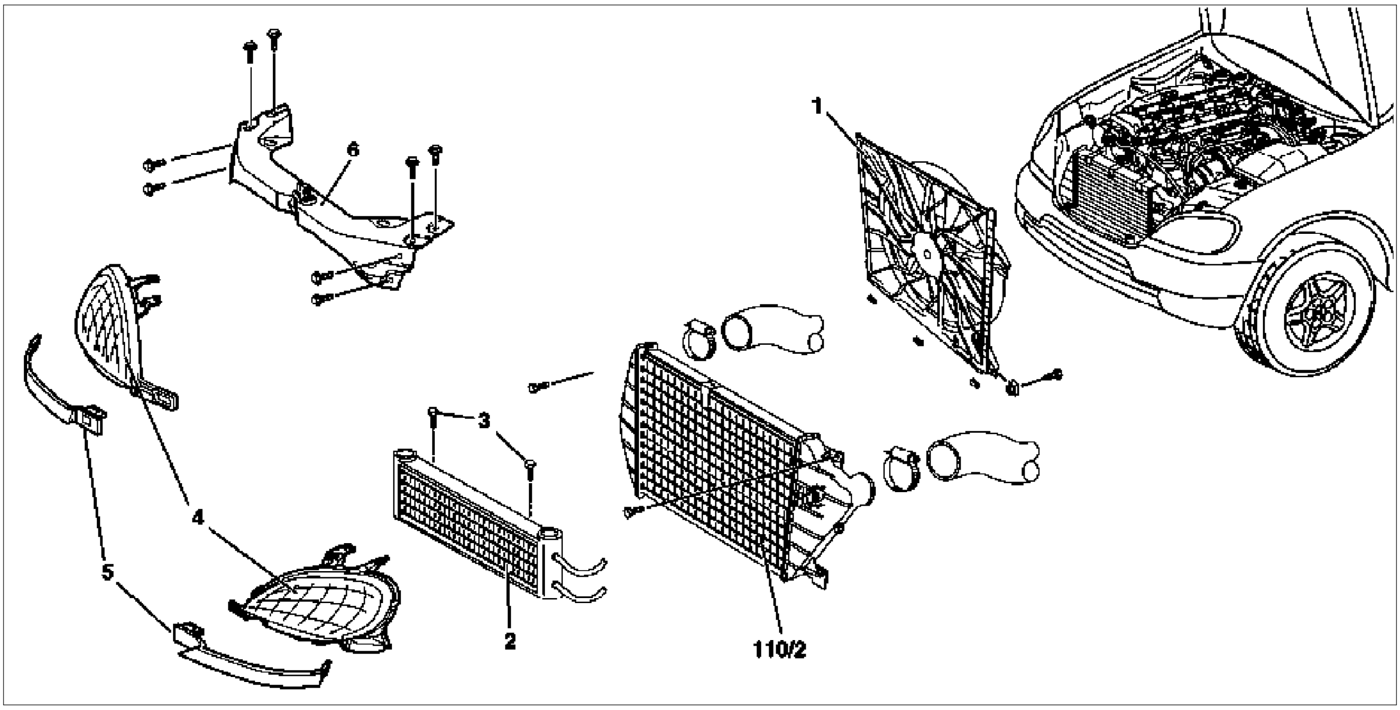
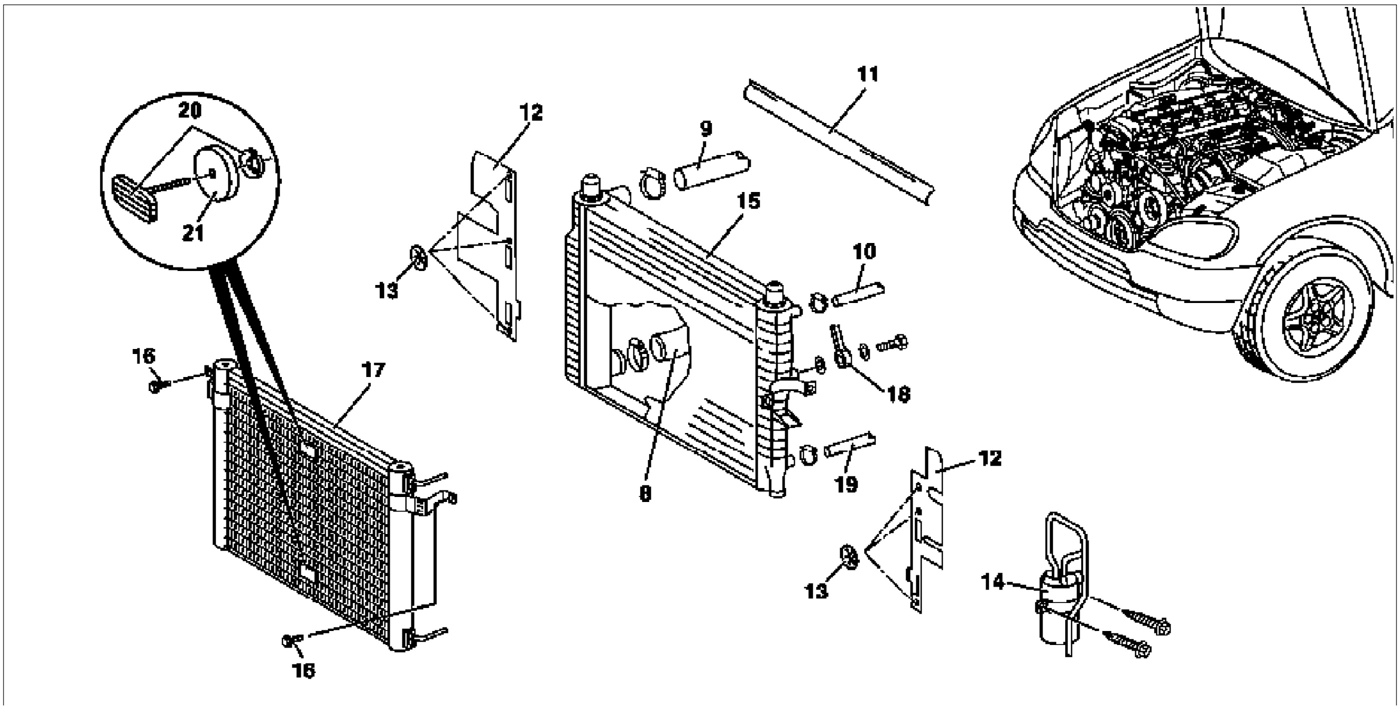
AR20.20-P-3865MM	Remove/install radiator	10.11.99

ENGINE 612.963 in MODEL 163.113



P20.20-2080-09

1	*Electric fan*
2	*Low temperature cooler*
3	*Bolts (low temperature cooler)*
4	*Lamp units*
5	*Cover strips*
6	*Radiator crossmember*
110/2	*Charge air cooler*



P20.20-2081-09

8	*Coolant hose for coolant pump*
9	*Coolant hose of thermostat housing*
10	*Coolant hose of coolant expansion tank*
11	*Seal strip*
12	*Air ductings*
13	*Mounting clips*
14	*Air conditioning fluid reservoir*
15	*Radiator*
16	*Bolts*
17	*Capacitor*
18	*Power steering oil line (Return line of radiator! Power steering pump supply reservoir)*
19	*Power steering oil line (feed line of steering gear! radiator)*
20	*Attachment parts*
21	*Damper rubber*

	Removal/installation		
⚠ **Danger!**	**Risk of injury** to **fingers being jammed or pinched** when removing, installing or aligning hoods, doors, trunk lid/tailgate or sliding roof.	When moving components, ensure that no body parts or limbs are within the operating range of moving parts.	AS00.00-Z-0011-01A

⚠ **Danger!**	**Risk of injury** to skin and eyes suffering scalding from contact with hot coolant spray. **Risk of poisoning** from swallowing coolant.	Do not open cooling system unless coolant temperature is below 90 °C. Open cap slowly and release the pressure. Do not pour coolant into beverage bottles. Wear protective gloves, protective clothing and eye protection.	AS20.00-Z-0001-01A
1	Open engine hood and raise to vertical position	i Have second person secure hood.	AR88.40-P-1000GI
2	Connect no load current retention unit		*WH58.30-Z-1005-09A
3	Disconnect battery ground cable		AR54.10-P-0003A
4	Remove trim panel of cylinder head cover	 Nm Nm	AR01.20-P-5014-02B *BA01.20-P-1002-01A *BA01.20-P-1003-01A
5	Remove bottom part of noise encapsulation at front		AR94.30-P-5400GH
6	Remove electric fan (1)	i Remove toward bottom.	AR20.40-P-5000M
7	Drain coolant Notes on coolant	i At radiator. All engines	AR20.00-P-1142M AH20.00-N-2080-01A
8	Remove charge air cooler (110/2)		AR09.41-P-6817MM
9.1 y	Attach guard plate for radiator/condenser Guard plate for radiator/condenser	i With automatic air conditioning, code 581a and AC system or Tempmatic USA, code 580. i Attach additional AC condenser in the vehicle. Engine 606 in model 124, Engine 606.961 in model 140, Engine 112, 113, 604, 605, 611.960 in MODEL 202, Engine 602.983, 612.966 in MODEL 461, Engine 628.962, 612.965, 606.964, 112.945, 113.962/ 982 in MODEL 463, Engine 111, 112, 611.962, 612.962 in model 203, Engines 112, 113, 611.961, 612.961, 613.961 in MODEL 210, Engine 112 in model 170, Engine 112 in MODEL 220, Engine 113 in MODEL 211, 215, 220, Engine 112 in MODEL 208, Engine 112, 612.963, 628.963 in MODEL 163, Engine 112.923 /943, 113.961 in MODEL 129, Engine 137, 275 in MODEL 215, 220, Engine 613.960, 628.960 in MODEL 220, Engine 113.992 in model 230.474, Engine 271 in model 209, 203, Engine 285.950 in model 240.078 /178, Engine 612.967 in model 209.316, Engine 648 in model 220 Engine 112.951 in model 639.601/603/ 605/701/703/705/801/803/805 Engine 646.983/984 in model 639.601/ 603/605/701/703/705/801/803/805 Engine 646.982 in model 639.601/603/605/701/703/705	WF58.50-P-0110-01A
10	Remove seal rail (11)		
11	Extract steering oil from reservoir	Hand pump	*210589007100
12.1	Disconnect power steering oil line (return line radiator ! power steering pump supply reservoir) (18)	i Seal connections. i **Installation:** Install new sealing rings. Nm Clamp Set of stop plugs	 *BA46.30-P-1012-01A *000589543700 *129589009100
12.2	Disconnect power steering oil line (feed line of steering gear ! radiator) (19)	Clamp Set of stop plugs Hexagon socket wrench Hexagon socket wrench	*000589543700 *129589009100 *WH58.30-Z-1001-06A *WH58.30-Z-1002-06A

13	Disconnect coolant hose to coolant pump (8), coolant hose from thermostat housing (9) and coolant hose from coolant expansion tank (10) at radiator	Hexagon socket wrench Hexagon socket wrench	*WH58.30-Z-1001-06A *WH58.30-Z-1002-06A
14	Detach air guides (12)	**Installation:** Replace fastening clamps (13)	
15	Unscrew bolts (16) at condenser (17) to radiator	Avoid deformation of condenser lines. Do not disconnect lines.	
16	Remove attachment parts (20) and rubber shock absorber (21)	**Installation:** Ensure, that the rubber shock absorbers do not drop when installing the radiator. Replace fastening clamps.	
17	Take off fluid reservoir of AC (14) at radiator	Place to the side with lines connected. External torx set	*001589760900
18	Remove bracket of charge air pipe at left radiator	**Installation:** Insert bracket of charge air pipe into the bracket at the radiator.	
19	Remove radiator (15)	**Installation:**When installing, the mounting studs of the radiator must be inserted into the rubber grommets of the lower crossmember.	
20	Install in the reverse order		
21 e	Check headlamp adjustment, correct if necessary Check and correct headlamp adjustment		AP82.10-P-8260A
22	Inspect cooling system for leaks		AR20.00-P-1010HA
23	Fill power steering pump and bleed		
⚠ **Danger!**	**Risk of accident** caused by vehicle starting off by itself when engine is running. **Risk of injury** caused by contusions and burns when working in engine during starting procedure	Secure vehicle to prevent it from moving. Wear closed and snug-fitting work clothes. Do not grasp hot or rotating parts.	AS00.00-Z-0005-01A
24	Run engine and inspect for leaks		

Crankcase ventilation, cylinder head cover

Number	Designation		Engine 612.963
BA01.20-P-1002-01A	Bolt, cylinder head cover trim panel to cylinder head cover	Nm	10
BA01.20-P-1003-01A	Bolt, cover panel to charge air distribution pipe	Nm	10

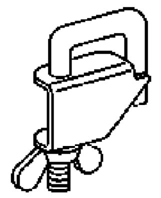
Power steering pump

Number	Designation		Model 163.113
BA46.30-P-1012-01A	Banjo bolt, power steering oil line to radiator	Nm	30

Cooling system

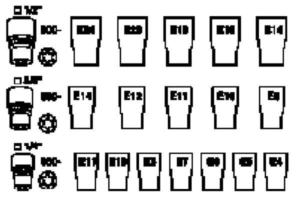
Number	Designation			Engine 612.963
BF20.00-P-1001-02E	Cooling system	Total capacity	Liter	Y 11.0

		Filling capacity of anticorrosion/ antifreeze agent down to -37 °C	Liter	Y 5.5
		Filling capacity of anticorrosion/ antifreeze up to -45 °C	Liter	Y 6.25
		Specifications for Operating Fluids	Sheet	BB00.40-P-0310-01A
			Sheet	BB00.40-P-0325-00A



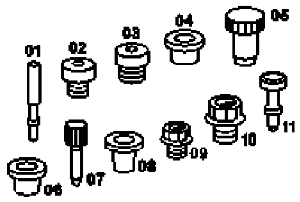
000 589 54 37 00

Clamp



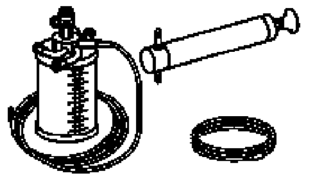
001 589 76 09 00

External Torx set



129 589 00 91 00

Set of stop plugs



210 589 00 71 00

Hand pump

Commercially available tools

Number	Designation	Make (e. g.)	Order number
WH58.30-Z-1001-06A	6 mm hexagon socket wrench to flexible shaft for hose clamps with worm drive	Hazet Güldenwerther Bahnhofstraße 25-28 D-42857 Remscheid	426-6
WH58.30-Z-1002-06A	7 mm hexagon socket wrench to flexible shaft for hose clamps with worm drive	Hazet Güldenwerther Bahnhofstraße 25-28 D-42857 Remscheid	426-7
WH58.30-Z-1005-09A	CMP 12.2 quiescent current retention unit	Hans Zeheter	

